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DETAILED DESCRIPTION

[Detailed Description of the Invention]

[0001]

[Field of the Invention] This invention relates to the washing machine which performs partial washing which removes partial dirt, such as a sleeve of clothing, and a collar.

[0002]

[Description of the Prior Art] It is the plan showing the washing machine which can perform the conventional conventional partial washing shown in JP,57-10393,U, and drawing 12 has formed the opening 32 which throws clothing into the center section of the wrap top plate 31 for the upper part of the body of a washing machine. The upper part of this opening 32 is covered with the lid 33 which can be opened and closed freely. Moreover, the washing part 34 which makes the shape of toothing near the opening 32 is formed by the front side of a top plate 31. In addition, various switches are formed in the control unit 35 prepared behind the top plate 31, and a setup of a washing process etc. is enabled. And after washing by rubbing a cuff or collars, such as a cutter shirt, etc. partially by the washing part 34, from opening 32, the cutter shirt etc. was thrown into the laundry sink within the body of a washing machine (not shown), and it was washing by operating the switch of a control unit 35.

[0003] However, the activity which needs the force of rubbing clothing against the washing part 34 is hard work for an operator, and had the trouble of being user-unfriendly. Then, there is a washing machine equipped with partial washing equipment as shown in JP,8-32285,B. Drawing 13 is the perspective view of the partial washing equipment 41, in drawing, 42 is cylinder-like the body of revolution for washing, and two or more brush objects 43 are formed in the peripheral surface. The turning effort of a motor 45 established in the body 44 transmits and carries out the rotation drive of this body of revolution 42 for washing through the moderation device 46 and a revolving shaft 47. Moreover, he forms the washing base 48 under the body of revolution 42 for washing, and is trying to pass the washing 49 (not shown) between the body of revolution 42 for washing, and the washing base 48. The brush object 43 has set up spacing of the body of revolution 42 for washing, and the washing base 48 so that it may **** on the washing base 48 top face. And if the body of revolution 42 for washing is rotated in the direction of arrow-head A and the washing 49 is inserted from the end-face 51 side of the sliding surface-like crevice 50, while, as for a washed object, the washing 49 will pass through the inside of the sliding surface-like crevice 50, the brush object 43 washes a washed object. That is, the touch area of the body of revolution 42 for washing and the washing 49 is increased, and the area which washes partial dirt is increased.

[0004]

[Problem(s) to be Solved by the Invention] In order to make an operator's burden light and to wash the dirt of the specific part of the washing partially with the above conventional washing machines Although he is trying to wash partial dirt by making it **** on the brush object 43 of the body of revolution 42 for washing which contains the partial washing equipment 41 of the method which carries out the rotation drive of the body of revolution 42 for washing which established the brush object 43 on the body of a washing machine (not shown), and rotates the washing 49 With the partial washing

equipment 41 of the method which carries out the rotation drive of the brush object 43, there was a fault that the fault that the burden to the washing 49 for a slide contact for the brush object 43 and the washing 49 to wash the washing 49 will be large, and will damage the ground of the washing 49 partially arose. And the bruise of the ground of parts, such as a collar and a sleeve, became intense rather than other parts with ** which is repeating and washing dirt, the cone collar, the sleeve, etc. with conventional partial washing equipment 41, and even if it was in the condition which can still be used except parts, such as a collar and a sleeve, there was also a trouble of having produced the result which shortens the LIFE again.

[0005] This invention was not made in order to solve the above technical problems, it can perform partial washing of the washing, without damaging the ground of the washing, and aims at obtaining the washing machine which had sufficient detergency in partial washing further.

[0006]

[Means for Solving the Problem] The body of a washing machine which had the water tank part arranged in the interior in the washing machine concerning this invention, In the washing machine equipped with the wrap lid for the top face of top covering which has opening which covers the top face of said body of a washing machine, and throws in the washing in said water tank part, and said top covering It has the boiler which has a heating means, and a water supply means to supply water to said boiler, and has the washing station which forms the jet nozzle which injects a steam and water in the shape of jet to the washing using the pressure of the steam generated from said boiler, and changes.

[0007] Moreover, the jet nozzle of said washing station is arranged so that the edge which forms opening of said top panel may be countered, and it is made to carry out fixed maintenance of the washing between said lids and top coverings.

[0008] Moreover, said washing station is attached in the field by the side of the water tank part of said lid.

[0009] Moreover, it makes possible adjustable [of the injection direction of said jet nozzle].

[0010] Moreover, OFF/ON of the water supply to said washing station is made for closing motion of said lid to be interlocked with.

[0011] Moreover, the steamy shutter which intercepts the front face of the nozzle of said jet nozzle is prepared, and said steamy shutter is interlocked with closing motion of said lid, and intercepts / opens the front face of said jet nozzle.

[0012] Moreover, surround the perimeter of the nozzle of said jet nozzle, it is made to install in the irradiation range between said washing machines, scattering prevention covering formed in the shape of [bellows-like] a cartridge by elasticity material is prepared, and the end chip section which misses the steam and water which dispersed in the location which counters said water tank part of said scattering prevention covering is formed.

[0013]

[Embodiment of the Invention] The important section perspective view and drawing 2 which show the washing machine whose gestalt 1. drawing 1 of operation is the gestalt 1 of implementation of this invention are the sectional view of drawing 1, and in drawing, the water tank part into which 1 puts the body of a washing machine, and 2 puts the washing, and 3 are wrap top coverings about the upper part of the water tank part 2, and have prepared opening 3a which throws the washing into a center section. 4 is the lid which closes opening 3a, and forms the monitor aperture 5. And a lid 4 is supported by the top covering 3 and rotation supporting-point 4a free [closing motion]. 6 is the washing station arranged in the field of the lid 4 of the location which counters opening 3a. In addition, 21 is a switch mentioned later.

[0014] Next, the configuration of a washing station 6 is explained. Drawing 3 (a) is the perspective view of a washing station 6, and drawing 3 (b) is the decomposition perspective view of a washing station 6. 7 is a boiler and a flexible tube 8 is connected. A flexible tube 8 For the cam 12 and cam 12 which are original **** in contact with the cam groove 11 which is the follower knot which determines the rotation supporting point 10 of the tube guide 9 to support and the tube guide 9 supported free [rotation] on a lid 4, and the support include angle of a tube guide 9, and a cam groove 11, rotation It

consists of revolving shafts 14 of the motor 13 to give and a motor 13.

[0015] Thus, actuation of the washing machine equipped with the constituted washing station 6 is explained based on drawing 3, drawing 4, and drawing 5. The sectional view of the washing machine with which drawing 4 set the washing, and drawing 5 are the block diagrams having shown the internal configuration of a boiler. **** of top covering which 15 has in the tooth back of the washing, the feed pipe with which 16 supplies water to a boiler 7 in the water from a water pipe etc., The valve in which, as for 17, impregnation of water carries out ON/OFF control, the heater at which 18 heats a boiler 7, The power source which connects 19 to a heater 18, the jet nozzle attached in the outlet of the flexible tube 8 with which the water included in a boiler 7 and a steam pass along 20, The switch with which 21 is interlocked with ON where OFF and a lid 4 are shut, after the valve 17 had opened the lid 4, and 22 are the washing arranged in the location which counters a jet nozzle 20.

[0016] First, the field of the dirt part of the washing 22, such as a collar and a sleeve, is carried out, put and arranged between a lid 4 and the top covering 3 on the top face, and the washing 22 is arranged so that it may counter at a jet nozzle 20. At this time, by shutting a lid 4, a switch 21 is turned on and a valve 17 is opened. And a power source 19 is put into a heater 18, power is supplied, and a boiler 7 is heated at 100 degrees or more. And since it is in the condition which the valve 17 opened, tap water is supplied to a boiler 7 via a feed pipe 15. The water included in the interior of a boiler 7 boils, and it becomes a steam. Thus, if water becomes a steam, vapor pressure will rise and the interior of a boiler 7 will become high pressure. And the steam and warm water of the boiler 7 interior jump out of the nozzle (not shown) at the tip of a jet nozzle 20 with this pressure. The nozzle (not shown) at the tip collides certainly [since it is arranged in the location which counters **** 15 of the top covering 3] to that of the washing 22 which the steam and warm water which jumped out of the jet nozzle 20 have on **** 15 of the top covering 3, and a jet nozzle 20 removes dirt 22a of the washing 22. In addition, if the commercial detergent is beforehand applied to the dirt 22a part of the washing 22, since dirt 22a will begin to melt, removal of dirt becomes easy.

[0017] Although the steam and warm water which were injected from the jet nozzle 20 splash when it collides with the washing 22, and they scatter on all sides, since the steam and warm water which scattered up are interrupted with a lid 4, dew a lid 4 and fall into the water tank part 2, it does not jump out besides the body 1 of a washing machine.

[0018] Here, the irradiation range L of the jet nozzle 20 of a washing station 6 and the washing 22 (refer to drawing 5) is explained. If an artificial solid fabric (what simulated collar dirt) is used for a trial cloth as the washing 22 and it asks for (%) whenever [washing] based on a JIS electric washing machine C9606 washing trial, a result as shown in drawing 6 will be brought. (%) is [whenever / washing] (%) = (front [after / washing / reflection factor-washing] reflection factor) / (front [original cloth reflection factor-washing] reflection factor) x 100 whenever [washing] by the reflection factor method. It computes using a formula.

[0019] In addition, using the thing of the output of 1350W as conditions for an experiment, every 100g/m of penetrant removers should supply water to the boiler 7 in the tap water adjusted by 22 degrees C, and the heater 18 of a boiler 7 should carry out optimum dose spreading of the liquid detergent only for partial washings of marketing beforehand on a contamination cloth. Moreover, the aperture of a jet nozzle 20 used the 2mm thing.

[0020] If this experimental result is looked at, whenever [washing / 40% of / which is obtained by the usual washing machine washing] can be obtained with the irradiation range L of 65mm. Therefore, the irradiation range L of a jet nozzle 20 and the washing 22 can detach to 65mm, and can also acquire a remarkable cleaning effect. Thus, since a dirt part can be washed also in the distance which separated to 65mm, the conditions of the thickness of the washing 22 are made widely. In addition, it can carry out in a short time extremely with 0.15 seconds till the completion of dirt washing of the surface of cloth which irradiated a steam and warm water.

[0021] next, water supply of the steam and water which are injected from a jet nozzle 20 -- amount of water is explained. the above -- the same -- an irradiation range L -- the irradiation time per 10mm and jet stream cross section -- 0.3 seconds -- carrying out -- the amount of closing motion of a valve 17 --

changing -- water supply -- as a result of changing amount of water and performing a washing trial, the result as shown in drawing 7 was able to be obtained. In addition, since whenever [washing] seldom changed in the irradiation range L between 0-10mm but whenever [of a little less than 46% / high washing] had been obtained from change of whenever [washing / of above-mentioned drawing 6], having set the irradiation range L to 10mm experimented with the irradiation range L of 10mm. Consequently, whenever [washing / 40% of / which is obtained by the usual washing machine washing] can be obtained by amount of water 30g/m, and can wash by the flow rate of very little water. [0022] Moreover, since there is an inclination for whenever [washing] not to go up, by the water supply flow rate of 70g or more to a boiler 7 and the water supply beyond this becomes useless as shown in drawing 7, water supply of 70g or more is unnecessary. Although relation with the capacity, as for this, for a boiler 7 to make a steam also influences, whenever [washing] is 55% or more, and since it is more than whenever [required / washing], water supply amounts of 70g or less are enough as it.

[0023] Therefore, according to the configuration of the washing machine equipped with the washing station 6 indicated in the gestalt 1 of operation The field which has partial dirt, such as a collar and a cuff, between a lid 4 and the top covering 3 is arranged on both sides of the washing 22 so that it may come to the part of **** 15 of the top covering 3. By arranging the jet nozzle 20 of a washing station 6 in the location which counters **** 15 of the top covering 3 Since a steam and warm water can be injected from a jet nozzle 20, can make it able to collide with the washing 22, and a dirt part can be washed, it will interlock further if a lid 4 is opened, and a valve 17 closes Supply of water stops, injection of the steam from a jet nozzle 20 and warm water is also stopped, and neither a steam nor warm water is flown to a user. Moreover, since a valve 17 opens where a lid 4 is closed, a fear of closing a lid 4, washing of the washing 22 being performed, and a hot steam not scattering to the exterior of the body 1 of a washing machine, and exposing a user to the elevated temperature of a steam is absolutely none at the time of use of a washing station 6.

[0024] To the gestalt 2. pan of operation, the washing station 6 arranged by the body 1 of a washing machine shows what performs rotation actuation, and drawing 8 looks at a motion of a flexible tube 8, a tube guide 9, and a jet nozzle 20 from a top face. The configuration of a washing station 6 is the same as that of the gestalt 1 of the above-mentioned implementation, and the explanation is omitted. If power is supplied to a motor 13 from the motor power source 23, a revolving shaft 14 will rotate and the cam 12 attached to the revolving shaft 14 will rotate. If a cam 12 rotates, a load will be applied to a cam groove 11 and a tube guide 9 will move. Rotation of a cam 12 is changed into the reciprocating motion which used the rotation supporting point 10 of a tube guide 9 as the supporting point through the cam groove 11, and a tube guide 9 moves in the direction of an arrow head of drawing 8 repeatedly. Since the steam and warm water which are injected from a jet nozzle 20 since it moves to the washing 22 at this time so that a jet nozzle 20 may trace can be automatically poured uniformly to the large range of the washing 22, the washing range can be made large.

[0025] moreover, the configuration of opening (not shown) which counters opening 2a of the water tank part 2 of the top covering 3 which sandwiches the washing 22 -- a square, although the irradiation range L of the washing 22 and a jet nozzle 20 will separate depending on the rotation include angle of a washing station 6 even if circular Since 40% can be obtained whenever [washing] to the irradiation range L of 65mm as shown in the experimental result of the gestalt 1 of operation Wide range partial washing can be washed without dropping washing capacity, even if there are an opening configuration of the top covering 3 and a rotation include angle which the irradiation range L of a jet nozzle 20 and the washing 22 leaves by rotation of a washing station 6 (it becomes far).

[0026] Gestalt 3. drawing 9 of operation shows the sectional view of the washing machine which is the gestalt 3 of implementation of this invention, and the same thing as the gestalt 1 of the above-mentioned implementation considers as a same sign, and omits that explanation. As 24 is a steamy shutter, 25 is a spring and drawing is shown in drawing 9 (a) When a lid 4 is opened, as a spring 25 reduces the steamy shutter 24, it comes to interrupt the transverse plane of the nozzle (not shown) (nozzle as used in the field of a claim) of a jet nozzle 20 and it is shown in drawing 9 (b) If a lid 4 is closed, the steamy shutter

24 will move contacting the top face of the top covering 3 from the transverse plane of a jet nozzle 20, and the steamy shutter 24 will open the transverse plane of the nozzle (not shown) of a jet nozzle 20. Therefore, it is user-friendly, without colliding with the steamy shutter 24, not jumping out of the body 1 of a washing machine, and scattering to a user, even if it becomes a steam and warm water from a jet nozzle 20 and is injected, when a lid 4 is opened, and water remains in the boiler 7.

[0027] Gestalt 4. drawing 10 (a) and drawing 10 (b) of operation are the important section perspective view and decomposition perspective view of a washing station showing the washing machine which is the gestalt 4 of implementation of this invention. In drawing, the same sign is given to the same part as the gestalten 1-3 of the above-mentioned implementation, and the explanation is omitted. Scattering prevention covering formed so that 26 might be formed in the shape of bellows for a flexible material, the perimeter of a jet nozzle 20 might be surrounded and it might install to the irradiation range L between the washing 22, and 27 had been formed in the location which counters the water tank part 2 of the scattering prevention covering 26, and are the chip section.

[0028] Thus, as shown in drawing 11, the steam and warm water out of which have arranged the scattering prevention covering 26 also between the washing 22 and the jet nozzles 20 (irradiation range L) which were put with **** 15 and the lid 4 of the top covering 3, and it came from the jet nozzle 20 during washing while it surrounded the perimeter of a tip of a jet nozzle 20 collide with the washing 22 like the arrow head of a continuous line, and as for the constituted washing station 6, dirt is removed. A steam and warm water disperse at this time. It is reflected with the scattering prevention covering 26, and the steam and warm water which dispersed are cut like the arrow head of a dotted line, and flow out of the chip section 28. That is, the scattering range of a steam and warm water can be stopped to the minimum by forming the scattering prevention covering 26 in which the end chip section 28 which surrounds an irradiation range L part from the perimeter of a jet nozzle 20, and serves as a recess path of a steam with the scattering prevention covering 26 was formed in the location which counters the water tank part 2.

[0029]

[Effect of the Invention] Since this invention is constituted as explained above, it does effectiveness as taken below so.

[0030] In the washing machine equipped with the wrap lid for the top face of the body of a washing machine which had the water tank part arranged in the interior, top covering which has opening which covers the top face of said body of a washing machine, and throws in the washing in said water tank part, and said top covering It has the boiler which has a heating means, and a water supply means to supply water to said boiler. Since it had the washing station which forms the jet nozzle which injects a steam and water in the shape of jet to the washing using the pressure of the steam generated from said boiler, and changes Only the liquid which a cleaning effect is high and are a steam and warm water since a steam and warm water perform partial washing can wash the partial dirt of the washing, and since a solid-state is not contacted, partial washing without a cloth bruise can be performed.

[0031] moreover, since the jet nozzle of said washing station be arrange so that the edge which form opening of said top panel may be counter, and it be made to carry out fixed maintenance of the washing between said lids and top coverings, where a lid be close, the washing can be fix in the body of a washing machine, and the steam and warm water which be inject from a jet nozzle can be certainly apply to the partial washing section of the washing.

[0032] Moreover, since a washing station will move up when the steam and warm water which are injected from a jet nozzle can be certainly applied to the partial washing section of the washing and a lid is opened further, since said washing station was attached in the field by the side of the water tank part of said lid, if it is completely at an obstacle in case the usual wash is performed, **** and user-friendliness are good.

[0033] Moreover, since it made possible adjustable [of the injection direction (include angle) of said jet nozzle], partial washing washing can be performed over the large area of the washing.

[0034] Moreover, since OFF/ON of the water supply to said washing station was made for closing motion of said lid to be interlocked with, when a lid is opened, a steam and water are not injected from a

washing station.

[0035] Since the steamy shutter which intercepts the front face of the nozzle of said jet nozzle is prepared, said steamy shutter is interlocked with closing motion of said lid and the front face of ZURU of said jet was intercepted / opened, when a lid is opened, even if the steam and water which remained in the washing station are injected, it is interrupted by the steamy shutter, and a user does not bathe or water does not hit.

[0036] Moreover, surround the perimeter of the nozzle of said jet nozzle and it is made to install in the irradiation range between said washing machines. Since the end chip section which misses the steam and water which dispersed in the location which prepares scattering prevention covering formed in the shape of [bellows-like] a cartridge by elasticity material, and counters said water tank part of said scattering prevention covering was formed Since the scattering range of a steam can be stopped to the minimum, soiling the circumference inside the body of a washing machine with water can also be prevented, a user does not bathe or water does not hit.

[Translation done.]